CALIFORNIA ENTERPRISE ARCHITECTURE PROGRAM
SEGMENT DESCRIPTIONS

Service Oriented Architecture (SOA)

SOA Segment Description:

The need for a state-wide architecture for SOA is driven by a number of factors. The primary driver is the fact that there is a great deal of misunderstanding about what SOA is, how it is implemented and maintained, and how services are shared among organizations. This segment is meant to assist the state of California in moving toward shared services in a cohesive manner and getting the most value from our investment into service development.

The term Service Oriented Architecture (SOA) expresses a software architectural approach that defines the use of services to support the requirements of software users. With SOA, integration becomes forethought rather than an afterthought even though the end solution may be composed of services developed in different programming languages, hosted on disparate platforms with a variety of security models and business processes.

A service is a program that can be interacted with through well-defined message exchanges. Services must be designed for both availability and stability. Services are built to last while service configurations and aggregations are built for change. Agility is often promoted as one of the biggest benefits of SOA—an organization with business processes implemented on a loosely-coupled infrastructure is much more open to change than an organization constrained by underlying monolithic applications that require weeks to implement the smallest change. Loosely-coupled systems result in loosely-coupled business processes, since the business processes are no longer constrained by the limitations of the underlying infrastructure. SOA also provides a methodology and framework for documenting enterprise capabilities and can support integration and consolidation activities which are at the heart of many of the goals in the California IT Strategic Plan.

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SOA Key Architectural Driver(s):

- Need to reduce the total cost of ownership of Information Technology (IT) solutions.
- Need to be more responsive to changing business requirements. Therefore, need to reduce the time to develop new applications.
- Need to utilize State IT assets more effectively.
- Need to reduce the number of technology disparities. That is, need to standardize architectures, platforms, packaged applications, and reuse component functionality wherever practical.
- Need better control over deployed IT assets.
- Need to reduce the risk of application development by reusing proven, tested services.

SOA Enterprise Architecture (EA) Goal(s):

- Provide the blueprint for a service oriented architecture that supports California business services.
- Provide a key set of SOA principles.
- Establish a California SOA Center of Excellence to provide SOA leadership, governance, and management of SOA components.

California Service Center (CSC)

CSC Segment Description:

Goal 1 of the California State IT Strategic Plan states, "Make Government Services More Accessible to Citizens and State Clients." It is further explained as follows:

> "The State will complete a customer-focused, technology-enabled transformation in service delivery to improve the accessibility, value and cost–effectiveness of services, benefits and information provided to the public, businesses, other government agencies and state employees."

The purpose of the CSC Segment is to assist in providing an architectural foundation to the development of the new California Service Center and assist in meeting the objectives of Goal 1. This segment architecture will work with CSC stakeholders to identify enterprise-level processes, responsibilities and transitions necessary to migrate the State's current e-Services business operations towards meeting the desired target state as defined by the Strategic Plan (figure 1).

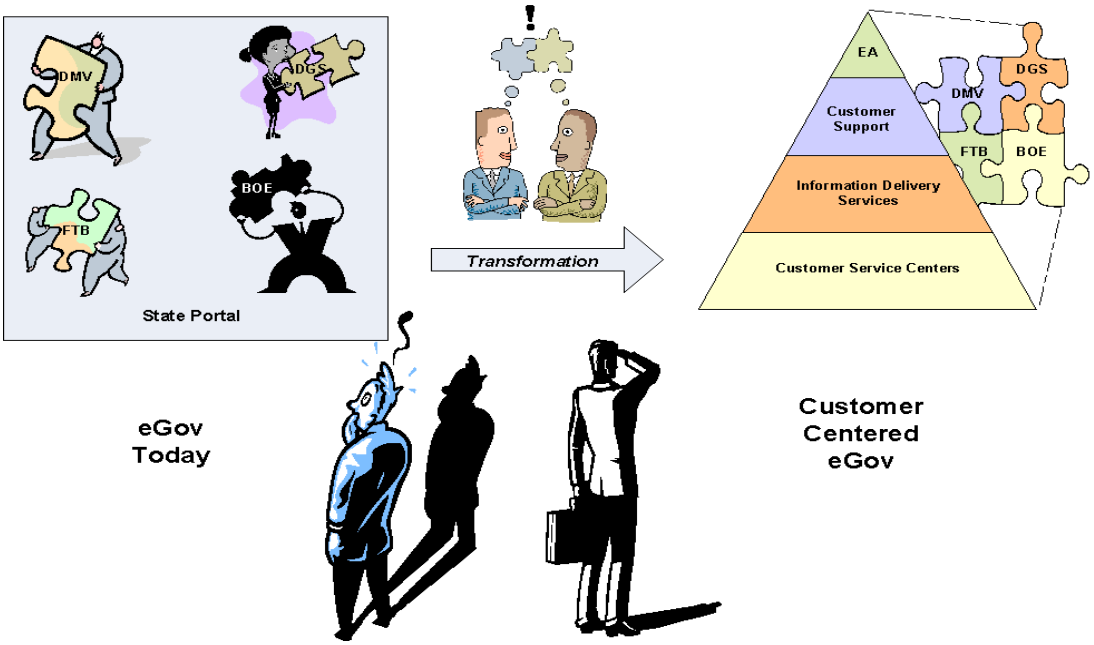

Figure 1 - Transformation of State Portal to the California Service Center

CSC Key Architectural Driver(s):

- Customer Centered – Realign current delivery of eGov content and services toward to a more common customer-centric State Enterprise Business Reference Model.

- Federation – Describe, document and educate agencies on what a federated portal strategy is and how they can share services (web services). This is in contrast to the centralized portal model that was tried in the past.

- Leverage the work of the State Portal Framework Team (made up of the State Library and the California Research Bureau) – Look at the work of the State Portal Framework Team and expand upon it from an EA perspective.

- Governance – Recommend what a governance process would look like describing those items that should be centralized and shared, and those items that should be federated and managed.

CSC Enterprise Architecture Goal(s):

- To enable the State to start the transformation process towards the "one-stop shopping" paradigm for government services and to proved a framework and model for agencies to use in the development of shared and integrated services.

Identity, Authentication and Privacy (IAP)

IAP Segment Description:

In order to achieve the state's goals of access to services and integration, state programs need to work together to create cross organizational applications that have a "line of business" approach and are organized around customer groups. One of the foundational needs for moving forward with Goal 1 of the California IT Strategic Plan (Make Government Services More Accessible) is to be able to effectively identify, and authenticate users, while maintaining the privacy of their data.

This architectural segment creates a framework for implementing a federated Identity and Authentication Management infrastructure. Agencies and Departments can use this framework as a guide in the development of a federated authentication model that assists in the implementation of technologies and standards needed for controlling access to critical online applications and resources. Effective IAP solutions allow organizations to use verification of identity as a security measure to protect confidential data from unauthorized use and to stop information about individuals or groups from becoming known to people other than those they choose to give the information to. A federated approach to Identity and Authentication Management allows citizens to cross organizational and program boundaries while appearing as though they are using a single application or service.

IAP Key Architectural Driver(s):

- Citizens and businesses look to government to protect both sensitive and personal information yet these customers also expect the State to make it easy to access information or conduct business with the State.

- Implementing a federated approach to Identity and Authentication Management, using a common framework, allows Agencies and Departments to establish trusted relationships for sharing information across organizational boundaries. Such trust expedites user access to sensitive information and extends interoperability among and across communities of interest.

- The IAP framework assists Agencies and Departments in development of Request for Proposals (RFP's) and Feasibility Study Reports (FSR's) and influences Portal projects and application solutions. IAP related EA components, tools, and web services can be shared to expedite future development and to reduce maintenance and operational costs.

IAP Enterprise Architecture Goal(s):

- Minimize the burden on business, citizens, and government when obtaining State services on-line while preserving security and privacy of information.

- Enable functional interoperability by establishing a common framework for securely sharing identity and authentication information across jurisdictional, organizational, and functional boundaries.

- Reduce costs associated with implementing identity and authentication solutions for agency applications across the system lifecycle.

Business Management Systems (BMS)

BMS Segment Description:

Business Management Systems (commonly referred to as Enterprise Resource Planning systems - ERP) provide an enterprise, operational view of the business of California State Government. A fully functional, integrated BMS will address all areas of an organization's main business functions to provide seamless and standardized business processes. For instance, all financial, human resource and procurement functions, (the core common business functions) across all of California State Government can utilize the same standard software and business processes. A BMS addresses business processes across multiple functions in the enterprise through applications which are modular and fully integrated. This eliminates redundancy and duplication of effort.

The segment architecture will take a look at the current structure of BMS in the state today and recommend a more integrated, "best practices" approach for the future. Since the existing systems of tracking state financials, human resources, and procurement were developed over the course of 30+ years, the state will undergo a transition period before realizing the significant benefits of totally integrated software systems and the business processes that the software supports. Initially there are some key architectural drivers that need to be addressed; these include development of a state-wide chart of accounts and the development of the key systems that support HR/payroll (as being developed through the 21st Century project at the Controller's Office), Financials, and Procurement.

BMS Key Architectural Driver(s):

- Describe best practices in the field of ERP / BMS
- Describe a fully Integrated, statewide system(s)
- Advocate for an enterprise Chart of Accounts
- Describe the transitional processes

The key drivers listed above come together to standardize business processes, eliminate system / labor redundancy and provide a single version of the truth in real time. This means that when the Governor or a Legislator asks (or is asked) a question, there is an immediate, accurate and single answer for the entire State (or by department etc). No reconciliations required.

With an integrated BMS suite, there is a "single version of the truth" that only needs to be entered once to be propagated to all parts of the business that need it. All business processes, all employees who touch the application, and all the executives who make decisions for the State, see the same version of reality, in real time, all the time. This is a revolution in the way we currently do business.

Currently, State Government allows all agencies, departments, boards and commissions within State Government to operate their internal business systems autonomously (with few exceptions). Over the past 30 years or more this has created an environment where literally hundreds of IT systems have been created in each department. In most cases these systems cannot communicate with each other and are often referred to as "silos". Since most of the business processes that these IT systems seek to automate are the same or similar across organizations, the great majority of these systems duplicate functionality of systems in other departments throughout State Government leading to enormous waste and conflicting, or inaccurate data.

Business Reference Model (BRM) Domain

BRM Domain Description:

The Business Reference Model (BRM) serves as a foundation for defining State Government business functions and the delivery of services to its citizens. The BRM is a high-level representation of a business vision, mission, goals, and the objectives that comprise the strategic business intent of government. It is used at the enterprise level to facilitate information technology (IT) cross-agency planning and analysis. The BRM will

help identify duplicative investments, gaps and opportunities for collaboration with-in and across agencies.

BRM Key Architectural Driver(s):

The BRM is a key strategic planning tool that separates government operations into four high level categories: Services to Citizens, Mode of Delivery, Support of Delivery of Services and Management of Government Services.

- Services to Citizens - describes the mission and purpose of California government in terms of the services it provides to and on behalf of the state's citizens. This business area is reserved for those functions that describe the reasons that California government exists. These are the services that the citizens expect the government to deliver e.g. education, community and social services electoral services, etc. It includes the delivery of citizen-centric, public and collective goods and/or benefits as a service and /or obligation to the California government to the benefit and protection of the state's general population.

- Mode of Delivery - describes the mechanisms the State uses to achieve the purpose of government or its services to citizens. It includes things like knowledge creation, financial, compliance and regulatory vehicles. These delivery vehicles can be direct or indirect delivery. Mode of delivery also is used to identify delivery mechanisms for the support delivery of services business area.

- Support Delivery of Services - Provides the policy, programmatic and managerial controls and oversight necessary to facilitate the state government's delivery of services to citizens and to other state and local governments.

- Management of Government Resources - describes the day-to-day resource management activities that must be performed for the State to operate effectively. The BRM most importantly is a portfolio planning tool that can use across the enterprise to assist in facilitating a holistic view of the state's cross-agency LOB and functions. The BRM can be referenced to other enterprise architecture reference models to identify; for example, common functionality, applications, data, and infrastructure configurations. This helps the planning process by identify similar or related applications, data or hardware that is performing essentially duplicative or similar functionality. There can be significant savings to the state from leveraging existing applications and modules through sharing and reuse. The BRM will assist government in its efforts to become more citizens centric.

The use of these four high level categories allows for the identification of external and internal government lines of business (LOB). These LOB are broken down into functional

service areas so planners can look at the enterprise of government services through common LOB and functions.

BRM Enterprise Architecture Goal(s):

The initial goal will be to provide a BRM document that identifies and defines at a high level the California Government business functions and the delivery of services to citizens. The BRM will initially focus on the strategic intent of defining an “as is” baseline and comparing this to a desired architecture. The BRM will reference other architecture models that can be used during the gap analysis to identify similar or related applications performing similar or duplicative functionality. An additional goal of the BRM during this initial phase is to identify tools and templates that will be needed to support on-going BRM efforts. This information will be used during phase two to create the necessary BRM tools needed to support the state’s strategic planners to incorporate enterprise architecture concepts and practice in their respective organizational planning processes.